Erfan Loghmani

Curriculum Vitae/Resume

Education

2021–present **Ph.D. in Quantitative Marketing**, *University of Washington - Michael G. Foster School of Business*, Current GPA: 3.77.

Relevant courses, *Microeconomics & Econometrics Sequence, Interactive Learning, Dynamic Choice Models, Applied Microeconomics, Non-cooperative Game Theory, Natural Language Processing, Empirical Industrial Organization, Machine Learning for Big Data, Seminar on Machine Learning Methods*.

Supervised By:, *Prof. Hema Yoganarasimhan, Prof. Lalit Jain*.

2018–2021 **Master of Science in Artificial Intelligence**, *Sharif University of Technology*, Tehran Iran.

2014–2018 **Bachelor of Science in Computer Engineering**, *Sharif University of Technology*, Tehran Iran.

Fields of Interest

Machine Learning, Causal Inference, Applied Microeconomics, Active Learning, Healthcare, Recommendation Systems, Social Data Analysis

Research Experience

working on **Smoking Cessation and Mental Health**, *Foster School of Business, Supervised By Prof. Goli and Prof. Yoganarasimhan*.

During an early-stage project, I am actively involved in an interdisciplinary endeavor focused on smoking cessation and mental health issues. Currently, our team is engaged in an extensive literature review to gather a comprehensive understanding of existing research in this area. Additionally, we are meticulously exploring various public and private datasets, seeking valuable insights that could inform our project's direction. If you have any ideas or access to relevant datasets that could contribute to our research, please do not hesitate to reach out.

2023 **Effective Adaptive Exploration of Prices and Promotions in Choice-Based Demand Models**, *Foster School of Business, Supervised By Prof. Jain and Prof. Yoganarasimhan*.

In this project, we consider the problem of setting optimal prices and promotions for a number of products in a category. Using the Thompson Sampling approach, we develop a regret-minimizing algorithm for the retailer to simultaneously find optimal prices and promotions in an interactive environment. We prove and leverage some properties of the demand model to solve the initially untractable optimization problems needed by the Thompson Sampling method.

2022 **Contextual Bandits with Noisy Contexts and Cohort Information**, *Foster School of Business*, Supervised By Prof. Jain and Prof. Yoganarasimhan.

We introduced a contextual bandit setting that incorporates noisy user features and availability of cohort information. We showed that standard contextual bandits might fail in this setting, and we proposed a new algorithm that overcomes the challenges of this setting.

2020 **Representation Learning on Dynamic Graphs**, *Sharif University of Technology*, Supervised By Prof. Fazli.

Within this project, our primary focus revolved around the development of an innovative online learning method tailored specifically for graph-structured data. Our objective was to enhance the accuracy and training efficiency of tasks such as link prediction and node classification. Building upon the foundation laid by the JODIE framework, we identified a crucial issue pertaining to loss function. To address this limitation, we devised a solution that not only improved the model's accuracy but also reduced the training time.

Publications

- Jain, L., Li, Z., **Loghmani, E.**, and Mason, B., Yoganarasimhan, H., Effective Adaptive Exploration of Prices and Promotions in Choice-Based Demand Models (2023). Available at SSRN: https://ssrn.com/abstract=4438537

- **Loghmani, E.**, Fazli, M., Effect of Choosing Loss Function when Using T-batching for Representation Learning on Dynamic Networks , 2021 (Under Review in Information Sciences)
- Fazli, M., Alian, P., Owfi, A., **Loghmani, E.**, RPS: Portfolio Asset Selection using Graph based Representation Learning, 2021 ArXiv

Work Experience

Technical Team Member — **Rooberah.co**, *July 2019 - July 2020, June 2021 - August 2021*.
At Rooberah.co, I played a key role in the development of a Software as a Service (SaaS) platform aimed at boosting online store sales through the utilization of experimentation and machine learning techniques like recommender systems. My primary responsibility involved designing and implementing innovative features. Throughout my term, I demonstrated my proficiency in coding and my ability to translate complex algorithms into practical solutions within a dynamic and fast-paced environment.

Software Engineer — **Pushe.co**, *May 2018 - Febuary 2019*.
At Pushe.co, I started as a backend developer, utilizing the Django web framework to create robust web applications. Later, I joined the Data team, where I designed and implemented data science methods for fraud detection and CTR prediction. Through machine learning and statistical modeling, I contributed to data-driven decision-making. My experience at Pushe.co showcased my versatility in software engineering and data science, delivering valuable solutions.

Poster Presentation

2019 — **Representation Learning on Dynamic Graphs**, *ICTP Workshop on Science of Data Science*, Trieste Italy.

Teaching Experience

Teaching assistant — Pricing Strategy and Analytics, Spring 2022, Winter 2023

Teaching assistant — Customer Analytics, Fall 2022

Teaching assistant — Analytics for Marketing Decisions, Winter 2022

Teaching assistant — Convex Optimization, Spring 2020

Teaching assistant — Engineering Probability and Statistics, Spring 2020, Fall 2017, Spring 2017

Teaching assistant — Social and Economic Networks, Fall 2019, Spring 2018

Teaching assistant — Data Structures and Algorithms, Fall 2016

Academic Service

2015–2017 — Member of the Student Scientific Chapter (SSC), Computer Engineering Department of Sharif University of Technology, SSC is the student committee concerned with directing the department extra-curriculum activities.

Computer skills

Advanced — PYTHON (PyTorch, Tensorflow, Pandas), C/C++
Intermediate — R, Stata, Matlab, Bash, PHP, javascript, Java, HTML, LaTeX, Linux
Familiar with — Octave, Scala